

Enclosed in the œsophagus of the animal I found a morsel of food, consisting of the grinding-plate and jaws of a snail with adherent muscular parts. This observation, like the statements of F. Müller as to the war of destruction waged by *Geoplana subterranea* against the Earth-worms, is opposed to Darwin's supposition that the terrestrial *Planariæ* only feed upon vegetable food, and indeed upon rotten wood, on which they are principally found. Darwin certainly kept some specimens in confinement for 21 days, without giving them any other nourishment than rotten wood, and during this period the animals grew considerably. Nevertheless this observation could not be decisive, as the contents of the intestine were not examined. The intestine of my specimen did not contain a single vegetable cell.

Of the nervous system nothing could be ascertained by preparation; and of the sexual organs I have only to mention the seminal vesicle, and the penis, which may be easily isolated at the genital orifice in the form of a globular body of $\frac{1}{2}$ a line in diameter. The seminal vesicle contained no spermatozoids. The true form of these contractile organs, which are composed of very fine muscular fibres, can only be ascertained by the examination of fresh specimens. The same applies to the sexual glands, the water-vascular system, &c. But for the purpose of subsequent histological investigation, a solution of 1–2 grains of bichromate of potash in the ounce of water will always be far preferable to spirits for the preservation of these extremely delicate animals, and I warmly recommend this solution to all collectors.

II.—*Description of a new species of Earth-worm (Lumbricus corethrurus)*. By Dr. F. MÜLLER*.

Lumbricus corethrurus, Brush-tail, the commonest of the Earth-worms of this country (Brazil), and which may be found in almost every clod of arable land, is rather slender, soft, and readily torn; the skin is nearly colourless, translucent, so that the colour of the body is principally caused by the intestine and blood-vessels, and therefore it appears more reddish towards the anterior extremity, grey in the middle, and pale reddish-white posteriorly. The measurement of nine animals all bearing clitelli (and killed in spirit of wine, because the length is constantly varying during life) gave on the average 28^{'''} in length, of which the clitellus measured 3^{'''}, and the space in front of it 4^{'''}. The body is cylindrical, attenuated anteriorly from the clitellus, and of

* This description is given by Schultze, and is referred to in the preceding paper, at p. 6.

a tolerably uniform thickness posteriorly. The number of segments is about 200–250, of which 13 are in front of the clitellus; the latter, which is often wanting, includes 8 segments. The foremost segment is grooved longitudinally, like the three anterior segments in *Geoscolex maximus*, Leuck. When the animal, feeling about, extends the head, one or two similar segments, together with a clavate head-lobe with a long peduncle, make their appearance from the first segment. On the foremost segments the bristles exhibit the usual position, the four bristles of each side being approximated in pairs; the upper pair is continued as far as the clitellus, whilst the two bristles of the lower pair gradually become more distant; from the clitellus backwards we see on each side only two rows of separate bristles: these are the first and third rows counting from below upwards; the latter runs about the middle, between the belly and the back; the insertion of the second and fourth bristles varies in height on each segment, but without any definite law being perceptible; sometimes, for example, they are placed alternately higher and lower, so that those of the 1st, 3rd and 5th, and again those of the 2nd, 4th and 6th segments lie in the same longitudinal line; sometimes three are elevated and two again depressed, so that those on the 1st and 5th segments stand at an equal height, those on the 2nd and 4th higher, and those on the 3rd still higher; sometimes also they maintain the same height on several consecutive segments, &c. After a greater or less number of segments (*e. g.* 20–30), the two rows of bristles still existing also cease their regularity: first the lower row, and then the upper one which runs along the middle of the side; these bristles also then vary in the height of their insertion from segment to segment. This apparently perfectly chaotic arrangement of the bristles becomes regular again in the vicinity of the hinder margin, by each segment bearing 8 bristles standing nearly at an equal distance apart, which alternate with those of the contiguous segments, by which 16 longitudinal rows (or also 3 spiral lines) of bristles are produced. It is remarkable that this singular arrangement of the bristles does not occur in young animals; these have two rows of pairs of bristles at the anterior extremity, which further back separate into four rows of isolated bristles.

The bristles on the anterior part of the body are more delicate, and appear to be slightly hooked; those on the hindermost part are very strong, straight and amber-coloured, stand upon distinct tubercles, and appear to be incapable of being entirely retracted. From these 16 rows of strong bristles, the whole tail acquires a brush-like appearance. The stomach is strongly muscular. The egg-capsules are almost globular, colourless and opalescent; I never found more than one embryo in them.

This short description will suffice to give a pretty good idea of our Earth-worm, and at least allow it to be easily distinguished from the other species hitherto described. Although the arrangement and form of the bristles are usually regarded as essential generic characters of the Earth-worms, and the present worm, which is so peculiar in this respect, appears imperiously to demand the formation of a new genus, I have been unable, especially on account of the regularly bristled young, to determine upon taking this course, the rather as there is no material anatomical or physiological peculiarity to justify this separation, as is the case for example in *Euaxes* and *Criodulus*, the latter of which is so deserving of a minute investigation. Perhaps some such point may appear to exist on the further investigation of a peculiarity, which has induced me to bring this insignificant animal before the zoological public. In almost all the larger specimens, one is struck immediately by a small spot about the end of the third quarter of the body, which appears of a more vivid red and as if inflamed; on the dorsal surface at this point the delicate skin often appears to be inflated, and as it were to form a small sac (*Bruchsack*). In specimens killed in spirits this spot looks like a second but much smaller clitellus, as it is sharply separated and rises a little above the segments before and behind it, probably because in the contraction of the body the weaker skin and muscular layer present less resistance here. If this spot, which I have not missed on any of the very numerous adult animals which I have examined for it, be examined with the lens, it is found to be composed of from 5 to 10, more or less distinctly separated, narrow segments, without bristles, and according to all appearance newly formed.

My first thought on seeing this new formation, was of the commencement of a transverse division; but, then, specimens produced by such a transverse division should have occurred, and these would have been destitute either of a proper anterior extremity or of the brush-like tail; for these, however, I have sought in vain. On counting the segments in nine specimens there proved to be nearly the same number of segments (namely 110) between the clitellus and this spot; the inconsiderable differences may be due to mistakes in counting. On the other hand, the number of segments behind the spot varied from 60 to nearly double that number. This spot might therefore possibly be a place for the formation of new caudal segments. Observations continued through all seasons may perhaps give us certainty even without a microscope.

Itajähly, June, 1856.